



UNITED STATES PATENT AND TRADEMARK OFFICE

14A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 10/751,309 | 12/31/2003 | Nagesh K. Vodrahalli | ITS.0008US (P17998) | 8796 |
| 21906 7590 01/03/2007 TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631 | | | EXAMINER STAHL, MICHAEL J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2874 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 2 MONTHS | 01/03/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/751,309
Filing Date: December 31, 2003
Appellant(s): VODRAHALLI ET AL.

Timothy N. Trop
For Appellant

EXAMINER'S ANSWER

MAILED

JAN 3 - 2007

GROUP 2800

This is in response to the appeal brief filed October 30, 2006 appealing from the Office action mailed July 27, 2006.

Art Unit: 2874

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

GROUND OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief: Claims 3-4, 8-10, 14-15, and 18-20 are rejected under 35 U.S.C. 112 ¶2.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6495813 FAN ET AL. 12-2002

US 6979136 TAKAGI ET AL. 12-2005

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1, 6, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fan et al. (US 6495813).

Claim 1: Fan discloses a method comprising: demultiplexing at least one wavelength from a multiplexed optical signal; and detecting said demultiplexed wavelength using an L-shaped detector. The detector has an L-shaped body **43** (top view in fig. 7 or cross sectional views through each branch in figs. 6a-6b). The detector array structure includes a color filter **54** (figs. 5, 6a, 6b) which demultiplexes light of one wavelength (green in the exemplary embodiment) and passes it to the detector.

Claim 6: Substrate **40** is regarded as an electrooptical bench.

Claim 7: A trench is provided in the bench to receive a portion of the L-shaped detector (figs. 5-7).

Claim 11: Electrical connections are formed from the bench to a portion of the L-shaped detector (fig. 5).

Claims 1-2 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Takagi et al. (US 6979136).

Claim 1: Takagi discloses a method comprising: demultiplexing at least one wavelength λ_A from a multiplexed optical signal; and detecting said demultiplexed wavelength using an L-shaped detector (fig. 17). The detector has an L-shaped body including a detecting portion 2 integrated with a base 63 (figs. 20A-B; col. 5 ln. 61 – col. 6 ln. 2).

Claim 2: The method includes providing an angled reflector 5 in the path of the multiplexed signal to reflect light of a first wavelength (λ_B) to a first detector 3 and to pass light of a second wavelength (λ_A).

Claim 12: Takagi discloses an optical system (fig. 17) comprising: a waveguide 11; and a demultiplexer coupled to the waveguide to demultiplex at least one wavelength from a multiplexed optical signal on the waveguide, the demultiplexer including a photodetector 2 to detect the wavelength, wherein the demultiplexer includes an integrated reflector (part of component 5) and an L-shaped photodetector (figs. 20A-B), the photodetector to detect a wavelength (λ_A) passed by the reflector. “Integrated” has been defined by one publicly available dictionary (<http://dictionary.oed.com/>) as “combined into a whole; united; undivided” or “uniting in one system several constituents previously regarded as separate”. In this case, the reflector is part of one system comprising the various components shown in fig. 17.

Claim 13: The demultiplexer includes an angled reflector 5 to reflect light of a first wavelength to a first detector and to pass light of a second wavelength.

(10) Response to Argument

A. Are claims 1, 6-7, and 11 anticipated under 35 U.S.C. §102(b) by Fan (U.S. Patent No. 6,495,813)?

The argument at p. 10 of the Brief asserts that there is no multiplexed optical signal in Fan, and that there is no basis for a position that holds that light in the air that might be imaged by the camera is a multiplexed optical signal. However, it is submitted that light coming into the camera is inherently multiplexed as it would normally consist of signals of plural wavelengths. Even white light is a mixture of wavelengths as can be shown by passing it through a prism. Furthermore, the fact that a filter 54 is used demonstrates that light entering the camera is multiplexed, because the filter 54 would be unnecessary if there was no need to separate one signal from others. Fan indeed uses a filter 54 to pass only a signal having a green wavelength, and a filter 56 to pass only a signal having a red wavelength (col. 6 lns. 50-54).

The argument also asserts that the construction of “multiplexed” defies conventional usage of those skilled in the art and reads “multiplexed” to cover anything. However that construction, which was elaborated in the final action mailed July 27, 2006 and is repeated below, does not cover “anything” and is compatible with conventional definitions. One publicly available dictionary (<http://dictionary.oed.com/>) has defined “multiplexed” as “subjected to the action of a *multiplexer*”. It further defined “multiplexer” as “a device which takes several *signals* and transmits them over a single *channel* without loss of their identity”. It defined “signal” as “a modulation of an electric current, electromagnetic wave, or the like by means of which information is conveyed from one place to another; the current or wave itself; also, a current or wave whose presence is regarded as conveying information about the source from

Art Unit: 2874

which it comes” (emphasis added). Finally, it defined “channel” as “that through which information, news, trade, or the like passes; a medium of transmission, conveyance, or communication; means agency” (emphasis added). Therefore in the Fan device light coming from the object to be imaged may be regarded as a signal because it is a wave whose presence conveys information about the source from which it comes (i.e., that object). At least a microlens element 57 (or 58) may be regarded as a multiplexer since it takes several signals (at least signals at different wavelengths) and transmits them over a single channel without loss of their identity. The material of a microlens, or any other transparent material between it and a filter, may be regarded as a channel since it acts as a medium of transmission. Accordingly, the interpretation of various broad claim terms in the rejection based on Fan is believed to be consistent with conventional definitions.

It is noted that there was no subheading “B.” in the ARGUMENT section of the Brief. The Examiner’s Answer follows the subheading convention used in the Brief as directed by MPEP 1207.02 and proceeds to “C.”.

C. Are claims 1-2 and 12-13 anticipated under 35 U.S.C. §102(e) by Takagi (U.S. Patent No. 6,979,136)?

Claims 1 and 2

The arguments at p. 10 of the Brief assert that the photo diode 2 in figs. 20A and 20B cannot fairly be said to be L-shaped, and that the assertion of it being L-shaped improperly

Art Unit: 2874

includes the circuit board **63**. It must be pointed out that the rejection referred to the L-shaped detector as including the detecting portion **2** integrated with the base **63**. The rejection did not allege that the element **2** by itself was L-shaped. It is submitted that the rejection's interpretation of the combination of elements **2** and **63** as an L-shaped detector is no less fair than claim 1's interpretation of corresponding elements **44** and **48** (present application fig. 3) as an L-shaped detector **26**. There appears to be no difference between Takagi's detector and appellant's detector **26**, in terms of arrangement of their respective corresponding elements in the shape of an "L".

Claims 12 and 13

The arguments at p. 11 of the Brief assert that the construction of "integrated" relied upon in the rejection is improper and effectively reads out the word "integrated". The arguments suggest that under the cited definition, everything in the world is integrated. However, following the definition of "integrated" as "uniting in one system several constituents previously regarded as separate", one can see that the reflector (part of element **5**) which was previously separate has been united with other previously separate parts to form the demultiplexer system of fig. 17. To assert that "everything in the world" is part of that system does not seem appropriate.

The arguments also refer to a prior admission in the Office Action mailed March 30, 2006 that Takagi did not teach the reflector passing a wavelength to be detected. Yet it was already explained in the Advisory Action mailed August 31, 2006 that a different interpretation of Takagi has been adopted. It is submitted that any previous interpretations of references before the July 27, 2006 final rejection are not relevant to the rejections under appeal.

Art Unit: 2874

(11) Related Proceeding(s) Appendix


No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mike Stahl *MJS*

December 12, 2006


SUNG PAK
PRIMARY EXAMINER

Conferees:

Rodney Bovernick (Supervisory Patent Examiner)



Drew Dunn (Supervisory Patent Examiner) 